Claims:

1. A method for controlling an internal combustion engine
   (10), wherein
   - the air fed to the combustion chambers of the internal
     combustion engine (10) is precompressed by means of a
     boosting device (25, 26),
   - the valve overlap of the gas exchange valves of the
     internal combustion engine is set by means of a variable
     camshaft displacement,
   - the quantity of fuel (MFF) requiring to be injected for
     homogeneous operation of the internal combustion engine
     (10) is determined and injected directly into the
     combustion chambers of the internal combustion engine
     (10),
   - the quantity of fuel to be injected (MFF) is divided into
     two partial quantities (MFF_1, MFF_2),
   - a first partial quantity (MFF_1) is injected into the
     intake stroke and a second partial quantity (MFF_2) is
     injected into the compression stroke,
   - the ratio with which the two partial quantities (MFF_1,
     MFF_2) are divided is determined as a function of the load
     range of the internal combustion engine (10).

2. The method as claimed in claim 1, characterized in that
when the internal combustion engine (10) is operating under
partial load and close to full load the valve overlap is set
in such a way that no fresh air will be flushed toward the
exhaust gas side of the internal combustion engine and the
ratio with which the two partial quantities (MFF_1, MFF_2)
are divided as well as the respective values for said
quantities for the end-of-injection instants (EOI_1, EOI_2)
are determined on the basis of ignition maps (KF).

3. The method as claimed in claim 2, characterized in that the quantity of fuel (MFF_1) to be injected into the intake stroke is obtained through multiplying the total quantity of fuel (MFF) by a division factor determined as a function of the mass of air (MAF_KGH) and the speed (N) of the internal combustion engine (10).

4. The method as claimed in claim 2, characterized in that the quantity of fuel (MFF_2) to be injected into the compression stroke is obtained through forming the difference between the values for the total quantity of fuel (MFF) and the quantity of fuel (MFF_1) to be injected into the intake stroke.

5. The method as claimed in claim 1, characterized in that when the internal combustion engine (10) is operating close to full load the valve overlap is set in such a way that fresh air will be flushed toward the exhaust gas side of the internal combustion engine and the ratio with which the two partial quantities (MFF_1, MFF_2) are divided is determined via the ratio (TE) of the mass of air ($M_{Cyl}$) remaining in the cylinder of the internal combustion engine (10) to the total mass of air ($M_{Cyl} + M_{Scav}$) taken in during a working cycle.

6. The method as claimed in claim 5, characterized in that the quantity of fuel (MFF_1) to be injected during the intake stroke is obtained through multiplying the total quantity of fuel by the ratio (TE) of the mass of air ($M_{Cyl}$) remaining in the cylinder of the internal combustion engine (10) to the total mass of air ($M_{Cyl} + M_{Scav}$) taken in during a working cycle.

7. The method as claimed in claim 5, characterized in that the quantity of fuel (MFF_2) to be injected into the

compressor stroke is obtained through forming the difference between the values for the total quantity of fuel (MFF) and the quantity of fuel (MFF_1) to be injected into the intake stroke.

8. The method as claimed in claim 2 or 5, characterized in that the value for the end-of-injection instant (EOI_1) is determined as a function of the mass of air (MAF_KGH), the engine speed (N) and the fuel pressure (FUP).

9. The method as claimed in claim 2 or 5, characterized in that the value for the end-of-injection instant (EOI_2) is determined as a function of the quantity of fuel (MFF_2) to be injected into the compression stroke, the engine speed (N), the coolant temperature (TCO) of the internal combustion engine and the fuel pressure (FUP).

10. The method as claimed in claim 1, characterized in that when knocking combustion occurs in a cylinder of the internal combustion engine (10) the ratio with which the two partial quantities (MFF_1, MFF_2) are divided will be changed for the individual cylinder.

11. The method as claimed in claim 10, characterized in that the quantity of fuel ($MFF\_2_{cyl\_x}$) injected into the compressor stroke will be increased and the quantity of fuel ($MFF\_1_{cyl\_x}$) injected into the intake stroke will be reduced.

12. The method as claimed in claim 1, characterized in that the air is precompressed by means of an exhaust gas turbocharger.

13. The method as claimed in claim 1, characterized in that the air is precompressed by means of a compressor driven

20

directly or indirectly by the internal combustion engine.

14. The method as claimed in claim 1, characterized in that the air is precompressed by means of an electrically driven compressor.

15. The method as claimed in claim 1, characterized in that the camshaft is displaced continuously.

16. The method as claimed in claim 1, characterized in that the camshaft is displaced in stages.